the invention. Accordingly, it is not intended than the invention be limited, except as by the appended claims.

We claim:

1. A method for handling masa within a food processing system having a pair of aligned, opposed separator conveyors having facing surfaces, the longitudinal ends of the separator conveyors positioned adjacent to a nozzle connected to a masa producing device, the food processing system further having at least two masa hoppers **including an end masa hopper and an intermediate masa hopper**, the masa hoppers and the separator conveyors connected by at least two endless belt feed conveyors having upper surfaces **[moving] that are movable** in the same direction, the feed conveyors positioned in an upstream and downstream relationship relative to each other **when the feed conveyors are moving in the same direction**, at least one **[feed conveyor positioned adjacent to the other longitudinal ends of the separator conveyors, each] of the** masa **[hopper] hoppers** having an associated sensor for sensing**[, the] a** level of **masa therein, the intermediate masa hopper having [mass and]** an opening positioned below a **[diverter gate located between the feed conveyors, each diverter gate connected to] gap located between the upstream and downstream feed conveyors, the gap being controlled by** an associated mechanism **[and pivotable between an open] that provides a closed gap** position, where the masa is guided from the upstream feed conveyor to the downstream conveyor, and **an open gap [a closed]** position, where the masa is guided **from the upstream conveyor** into the **intermediate** masa hopper **positioned below the gap**, each masa hopper located adjacent to a pair of aligned, opposed sheeter rollers, the sheeter rollers located adjacent to a masa hopper having side walls and a bottom wall defining a slot, the masa hopper also having at least one shaft above the bottom wall, each shaft having projections, the method comprising the steps of:

moving the facing surfaces of the separator conveyors **[at equal speed]** away from the nozzle;

feeding a generally continuous masa stream through the nozzle such that the masa stream contacts at least one of the facing surfaces of the separator conveyors and is guided between the facing surfaces of the separator conveyors;

[gripping] **separating** the masa stream **[between both facing surfaces of the separator conveyors pulling the masa stream such that the masa stream is separated]** into masa logs;

feeding the **masa** **[mass]** logs onto **[the upstream end of]** a feed conveyor; **[moving the masa logs from the separator conveyors along the upper surfaces of the feed conveyors;]**

moving the masa logs along the upper surfaces of the feed conveyors;

sensing the level of masa within an associated masa hopper;

causing a signal to change its state when the level of masa within the **associated** masa hopper is below a predetermined level;

selectively opening and closing the **[diverter gate]** **gap with the associated driving mechanism** to control the flow of masa logs to the **associated** masa hopper in response to said change in signal;

placing the masa logs through the opening of one of the masa hoppers;

feeding the masa logs to at least one shaft within the masa hopper; rotating the shaft;

removing gas bubbles from the masa with the projections on at least one shaft; and

forcing the masa through the slot, toward the sheeter rollers, with the projections on at least one shaft.

2. The method as defined by claim 1, wherein the method further comprises the **[steps of;]** **step of:**

arranging the facing surfaces of the separator conveyors to curve toward each other such that a cradle is formed to securely grip the masa.

3. The method as defined by claim 1, wherein the method further comprises the step of;

adjusting the speed of the facing surfaces of the separator conveyors to change the length of the masa logs.

[4. The method as defined in claim 1, wherein the mechanism is a pneumatic cylinder connected to a controller, the method further comprising;

programming the controller to compare said signal to a predetermined value, selectively commanding the operation of the pneumatic cylinder to control said selective opening and closing of the diverter gate.]

5. The method as defined in claim 1, wherein said **step of** feeding **the masa logs to at least one shaft within the masa hopper** is accomplished by gravity.

6. The method as defined in claim 1, wherein said **step of** rotating **the shaft** is accomplished by an A/C motor.

7. The method as defined in claim 1, wherein the masa hopper also has a pair of opposed, horizontally, aligned primary rollers between the slot and the sheeter rollers, the primary rollers each having a generally cylindrical surface and two ends, the method further comprising the steps of;

rotating the primary rollers;

drawing the masa between the primary rollers;

compressing the masa into a generally uniform curtain; and

feeding said uniform curtain into the sheeter rollers.

8. The method as defined in claim 7, wherein the masa hopper also has two endcaps, each endcap mounted around the ends of the primary rollers, the method further comprising the step of;

preventing the generally horizontal movement of the masa past the ends of the primary rollers.

9. The method as defined in claim 7, wherein there is a scrapper for each primary roller, each scrapper having a blade pivotally mounted and biased to longitudinally ride on the lower surface of its associated primary roller, the method further comprising the step of:

separating masa from the lower surface of each of the primary rollers.

10. A method for separating a stream of masa utilizing a pair of aligned, opposed separator conveyors having facing surfaces, the longitudinal ends of the separator conveyors positioned adjacent to a nozzle connected to a masa producing device, the method of separating the masa stream comprising the steps of:

moving the facing surfaces of the separator conveyors at equal speed away from the nozzle;

feeding a generally continuous masa stream through the nozzle such that the masa contacts at least one of the facing surfaces of the separator conveyors and is guided between the facing surfaces of the separator conveyors; and

gripping the masa stream between both facing surfaces of the separator conveyors, pulling the masa stream such that the masa stream is separated into masa logs.

11. The method as defined by claim 10, wherein the method further comprises the step of:

arranging the facing surfaces of the separator conveyors to curve toward each other such that a cradle is formed to securely grip the masa.

12. The method as defined by claim 11, wherein the method further comprises the step of:

adjusting the speed of the facing surfaces of the separator conveyors to change the length of the masa logs.

13. A method of feeding masa to **a** masa hopper within a food processing system, the food processing system further having a masa producing device and at least **an intermediate masa hopper and end masa hopper, [two masa hoppers,]** the masa hoppers and the masa producing device connected by **first and second [at least two]** endless belt feed conveyors

having upper surfaces **that are movable** **[moving]** in the same direction, the **first and second** feed conveyors positioned in an upstream and downstream relationship relative to each other **when the feed conveyors are moving in the same direction**, **[each masa hopper]** **at least one of the masa hoppers** having an associated sensor for sensing **[the level of mass and]** **a level of masa, the intermediate masa hopper having** an opening positioned below a **[diverter gate positioned]** **gap located** between the **upstream and downstream feed conveyors, the gap being controlled by** **[feed conveyors, each diverter gate connected to]** an associated **[mechanism and pivotable between an open]** **driving mechanism that provides a closed gap** position, where the masa is guided from the upstream feed conveyor to the downstream conveyor, and **[a closed]** **an open gap** position, where the masa is guided **[into the masa hopper,]** **from the upstream feed conveyor into the intermediate masa hopper positioned below the gap,** the method comprising the steps of:

moving masa logs, previously separated from a stream of masa produced from the masa producing device, along the upper surfaces of the feed conveyors;

sensing the level of masa within an associated masa hopper;

causing a signal to change its state when the level of masa within the masa hopper is below a predetermined level; and

selectively opening and closing the **[diverter gate]** **gap with the associated driving mechanism** to control the flow of masa logs to the masa hopper in response to said change in signal.

[14. The method of feeding masa as defined in claim 13, wherein the mechanism is a pneumatic cylinder connected to a controller, the method further comprising the steps of:

programming the controller to compare said signal to a predetermined value; and

selectively commanding the operation of the pneumatic cylinder to control said selective opening and closing of the diverter gate.]

15. A method for feeding masa to a pair of aligned, opposed sheeter rollers, the sheeter rollers located adjacent to a masa hopper having an opening for receiving masa and side walls and a bottom wall defining a slot, the masa hopper also having at least one shaft above the bottom wall, each shaft having projections, the method comprising the steps of:

placing the masa through the opening in the masa hopper;

feeding the masa to at least one shaft;

removing gas bubbles from the masa with the projections on at least one shaft; and

forcing the masa through the slot, toward the sheeter rollers, with the projections on at least one shaft.

16. The method for feeding masa as defined in Claim 15, wherein said feeding is accomplished by gravity.

17. The method for feeding masa as defined in Claim 15, wherein said rotating is accomplished by a motor.

18. The method for feeding masa defined in Claim **[17]** **<u>20</u>**, wherein there is a scrapper for each primary roller, each scrapper having a blade pivotally mounted and biased to longitudinally ride on the lower surface of its associated primary roller, the method further comprising the steps of:.

separating masa from the lower surface of each of the primary rollers.

19. The method for feeding masa as defined in claim 15, wherein the masa hopper also has a pair of opposed, horizontally, aligned primary rollers between the slot and the sheeter rollers, the primary rollers each having a generally cylindrical surface and two ends, the method further comprising the steps of:

rotating the primary rollers;

drawing the masa between the primary rollers;

compressing the masa into a generally uniform curtain; and

feeding said uniform curtain into the sheeter rollers.

20. The method for feeding masa as defined in claim 19, wherein the masa hopper also has two endcaps, each endcap mounted around the ends of the primary rollers, the method further comprising the step of:

preventing the movement of the masa past the ends of the primary rollers.

21. The method as defined in claim 1 wherein the upstream and downstream conveyors are operating in a fixed location and wherein the step of selectively opening and closing the gap with the associated driving mechanism comprises the step of moving a driven structure that is separate from the upstream and downstream feed conveyors.

22. The method as defined in claim 21 wherein the driven structure is a diverter gate positioned in the gap between the upstream and downstream feed conveyors, and wherein the step of moving the driven structure comprises moving the diverter gate between an open gap position and a closed gap position.

23. The method as defined in claim 21 wherein the associated driving mechanism is a pneumatic cylinder connected to the driven structure, the method further comprising the steps of:

connecting a controller to the pneumatic cylinder;

programming the controller to compare the signal to a predetermined value; and

selectively commanding the operation of the pneumatic cylinder to control the selective opening and closing of the gap.

24. The method of feeding masa as defined in claim 13 wherein the step of selectively opening and closing the gap with the associated driving mechanism comprises the step of moving a driven structure that is separate from the feed conveyors.

25. The method of feeding masa as defined in claim 24 wherein the moveable structure is a diverter gate positioned between adjacent ends of the upstream feed conveyor and the downstream feed conveyor, and wherein the step of moving the driven structure comprises the step of moving the diverter gate between an open gap position and a closed gap position.

26. The method of feeding masa as defined in claim 24 wherein the associated driving mechanism is a pneumatic cylinder connected to the driven structure, the method further comprising the steps of:

connecting a controller to the pneumatic cylinder;

programming the controller to compare the signal to a predetermined value; and

selectively commanding the operation of the pneumatic cylinder to control said selective opening and closing of the gap.

27. A method for handling masa within a food processing system having a source of masa logs positioned adjacent to a nozzle connected to a masa producing device, the food processing system further having at least two masa hoppers including an end masa hopper and an intermediate masa hopper, the masa hoppers and the source of masa logs connected by a first and second endless belt feed conveyor having upper surfaces, the feed conveyors positioned in an upstream and downstream relationship relative to each other, each masa hopper located adjacent to a pair of aligned, opposed sheeter rollers, the sheeter rollers located adjacent to a masa hopper having side walls and a bottom wall defining a slot, the masa hopper

also having at least one shaft above the bottom wall, each shaft having projections, the method comprising the steps of:

feeding the masa logs from the source of masa logs onto the first feed conveyor;

moving the masa logs along the upper surface of the first feed conveyor;

selectively controlling the flow of masa logs to an associated masa hopper;

placing the masa logs through the opening of the associated masa hopper;

feeding the masa logs to at least one shaft within the associated masa hopper;

rotating the shaft;

removing gas bubbles from the masa with the projections on at least one shaft; and

forcing the masa through the slot, toward the sheeter rollers, with the projections on at least one shaft.

28. The method as defined in claim 27 wherein the step of selectively controlling the flow of masa logs to the associated masa hopper comprises opening and closing a gap between the first feed conveyor and the second feed conveyor; the gap positioned above the intermediate masa hopper.

29. The method as defined in claim 28 wherein the step of opening and closing the gap between the first and second feed conveyor comprises moving a driven structure that is separate from the first and second feed conveyor.

30. The method as defined in claim 29 wherein the driven structure is a diverter gate positioned between adjacent ends of the first and second feed conveyor, and wherein the step of moving a driven structure comprises opening and closing the diverter gate.

31. The method as defined in claim 27 further comprising the step of sensing a level of masa within the associated masa hopper.

32. The method as defined in claim 31 further comprising the step of causing a signal to change its state when the level of masa within the associated masa hopper is below a predetermined level.

33. The method as defined in claim 32 wherein the step of selectively controlling the flow of masa logs to the associated masa hopper comprises the step of selectively opening and closing a gap positioned between the first and second feed conveyor and above the intermediate masa hopper, said opening and closing of the gap resulting from said change in signal.

34. A method of feeding masa to a masa hopper within a food processing system, the food processing system further having a masa producing device, an intermediate masa hopper, and an end masa hopper, the masa hoppers and the masa producing device connected by an upstream and a downstream endless belt feed conveyor, each conveyor having an upper surface, the intermediate masa hopper positioned below a gap defined between the upstream and downstream feed conveyor, the gap being adjustable between a closed gap position where the masa is guided from the upstream conveyor to the downstream feed conveyor, and an open position where the masa is guided into the intermediate masa hopper below the gap, the method comprising the steps of:

moving masa logs along the upper surface of the first feed conveyor; and

selectively opening and closing the gap to control the flow of masa logs to the intermediate hopper positioned below the gap.

35. The method as defined in claim 34 further comprising the step of sensing a level of masa within an associated masa hopper.

36. The method as defined in claim 35 further comprising the step of causing a signal to change its state when the level of masa within the associated masa hopper is below a predetermined level.

37. The method as defined in claim 36 wherein the step of selectively opening and closing the gap comprises selectively opening and closing the gap in response to said change in signal.

38. A method for feeding masa to a pair of aligned, opposed sheeter rollers, the sheeter rollers located adjacent to a masa hopper having an opening for receiving masa, walls, and a bottom wall defining] a slot, the masa hopper also having at least one shaft above the slot, each shaft having a projection, the method comprising the steps of:

placing the masa through the opening in the masa hopper;

feeding the masa to at least one shaft; and

forcing the masa through the slot, toward the sheeter rollers, with the projection on at least one shaft.

39. The method for feeding masa defined in Claim 38 comprising the further step of:

removing gas bubbles from the masa with the projection on at least one shaft.

40. The method for feeding masa as defined in Claim 38, wherein said feeding is accomplished by gravity.

41. The method for feeding masa as defined in Claim 38, wherein said rotating is accomplished by a motor.

42. The method for feeding masa as defined in claim 38, wherein the masa hopper also has a pair of opposed, horizontally, aligned primary rollers between the slot and the sheeter rollers, the primary rollers each having a generally cylindrical surface and two ends, the method further comprising the steps of:

rotating the primary rollers;

drawing the masa between the primary rollers;

compressing the masa into a generally uniform curtain; and

feeding said uniform curtain into the sheeter rollers.

43. The method for feeding masa defined in Claim 42, wherein there is a scraper for each primary roller, each scraper having a blade pivotally mounted and biased to longitudinally ride on the lower surface of its associated primary roller, the method further comprising the step of:

separating masa from the lower surface of each of the primary rollers.

44. The method for feeding masa as defined in claim 42, wherein the masa hopper also has two endcaps, each endcap mounted around the ends of the primary rollers, the method further comprising the step of:

preventing the movement of the masa past the ends of the primary rollers.

45. A method for feeding masa to a pair of aligned, opposed sheeter rollers, the sheeter rollers located adjacent to a masa hopper having an opening for receiving masa, walls, and a bottom wall defining] a slot, the masa hopper also having at least one shaft above the slot, each shaft having a projection, the method comprising the steps of:

placing the masa through the opening in the masa hopper;

feeding the masa to at least one shaft; and

removing gas bubbles from the masa with the projection on at least one shaft.

46. The method for feeding masa defined in Claim 45 comprising the further step of:

forcing the masa through the slot, toward the sheeter rollers, with the projection on at least one shaft.

47. The method for feeding masa as defined in Claim 45, wherein said feeding is accomplished by gravity.

48. The method for feeding masa as defined in Claim 45, wherein said rotating is accomplished by a motor.

49. The method for feeding masa as defined in claim 45, wherein the masa hopper also has a pair of opposed, horizontally, aligned primary rollers between the slot and the sheeter rollers, the primary rollers each having a generally cylindrical surface and two ends, the method further comprising the steps of:

rotating the primary rollers;

drawing the masa between the primary rollers;

compressing the masa into a generally uniform curtain; and

feeding said uniform curtain into the sheeter rollers.

50. The method for feeding masa defined in Claim 49, wherein there is a scraper for each primary roller, each scraper having a blade pivotally mounted and biased to longitudinally ride on the lower surface of its associated primary roller, the method further comprising the step of:

separating masa from the lower surface of each of the primary rollers.

51. The method for feeding masa as defined in claim 49, wherein the masa hopper also has two endcaps, each endcap mounted around the ends of the primary rollers, the method further comprising the step of:

preventing the movement of the masa past the ends of the primary rollers.

52. A method for feeding masa to a pair of aligned, opposed sheeter rollers, the sheeter rollers located adjacent to a masa hopper having an opening for receiving masa, walls, and a bottom wall defining] a slot, the masa hopper also having at least one shaft above the slot, each shaft having a projection, the method comprising the steps of:

placing the masa through the opening in the masa hopper;

feeding the masa to at least one shaft;

removing gas bubbles from the masa with the projection on at least one shaft; and

forcing the masa through the slot, toward the sheeter rollers, with the projection on at least one shaft.

53. The method for feeding masa as defined in Claim 52, wherein said feeding is accomplished by gravity.

54. The method for feeding masa as defined in Claim 52, wherein said rotating is accomplished by a motor.

55. The method for feeding masa as defined in claim 52, wherein the masa hopper also has a pair of opposed, horizontally, aligned primary rollers between the slot and the sheeter rollers, the primary rollers each having a generally cylindrical surface and two ends, the method further comprising the steps of:

rotating the primary rollers;

drawing the masa between the primary rollers;

compressing the masa into a generally uniform curtain; and

feeding said uniform curtain into the sheeter rollers.

56. The method for feeding masa defined in Claim 55, wherein there is a scraper for each primary roller, each scraper having a blade pivotally mounted and biased to longitudinally ride on the lower surface of its associated primary roller, the method further comprising the step of:

separating masa from the lower surface of each of the primary rollers.

57. The method for feeding masa as defined in claim 55, wherein the masa hopper also has two endcaps, each endcap mounted around the ends of the primary rollers, the method further comprising the step of:

preventing the movement of the masa past the ends of the primary rollers.